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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,253	06/26/2000	HIROO IKEGAMI	P107153-0000	5157

23353 7590 08/01/2002

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EXAMINER
MADSEN, ROBERT A

ART UNIT	PAPER NUMBER
1761	10

DATE MAILED: 08/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

A3-10

Office Action Summary	Application No.	Applicant(s)	
	09/581,253	IKEGAMI ET AL.	
	Examiner	Art Unit	
	Robert Madsen	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-10, and 12-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-10 and 12-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The amendment filed May 14, 2002 has been entered. Claims 1,2, 5-10, 12-15 are currently pending in the application. The rejections made in the prior office action are hereby withdrawn.

Response to Amendment

The amendment filed May 14, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "Annular groove portion" , "grove surface" of claim 1 ,"groove surface" of claim 10, or an internal rising wall that has a *flat configuration* that is formed with the bottom wall of the can and internally with the "annular groove portion" wherein t a *bottom* of the internal rising wall has an annular bead with a depth *inwardly* of the can *from* the bottom wall. These limitations appear in amended claims 1 and 10, and are not defined in the specification, original claims, or in the amended claims.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,2, 5-10, 12-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

"Annular groove portion" and "grove/groove surface" recited in amended claims 1 and 10 are not defined in the specification, original claims, or in the amended claims. Although there is a mention of an annular groove in Example 1, there is no explanation of what an annular groove is relative to the annular bead and annular ground portion defined in the drawings and original claims.

Furthermore, there is no embodiment that supports the recitation of a *flat* internal rising wall (connected to the bottom wall) and *internally formed with* an annular *groove* portion wherein the *bottom* of the "internal rising wall" can have an annular bead with a depth *inwardly* of the can *from* the bottom wall. The figure that the examiner can see as being closest to this description is Figure 3 E. Figure 3E shows an internal rising wall (albeit not labeled in the drawing) that connects the annular bead 33 and the bottom wall 34. However, based on the fact that applicant recites that the can "has" these features, and does not use the open or closed terminology "comprising" or "consisiting of" it is unclear if applicant's intention is to include or exclude a *second* annular bead 32 as shown in Figure 3E. Furthermore, an "annular groove portion" is not defined in this figure

With respect to the other embodiments, most of the figures(e.g. Figures 1, 3A, 3C) have annular beads (items 5,13,23) located at the *top of* the internal rising wall,

and an annular *ground* portion (in Figures 1 and 3A) or an extreme end of the annular *ground* portion (in Figure 3 E) is located at the *bottom* of the internal rising wall. Figure 3B shows what appears to be an internal wall rising to a bottom wall (item 17') wherein the bottom of the rising wall(17") is connected to an annular bead (16), but the specification fails to use this terminology to define these features and describes the bottom wall as *both* 17" and 17'.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,2, 5-10, 12-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 10, both claims recite the limitation "the annular ground portion". There is insufficient antecedent basis for this limitation in the claim. Additionally, claims 1 and 10 include the phrase "...a second inclined portion externally to be larger than the first inclined..." The term " larger than" is a relative term which renders claims 1 and 10 indefinite. The term "larger than" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For example, it is unclear whether the second inclined portion has a *larger* length or *larger* slope. Furthermore, one cannot even ascertain from the figure which is

the first or second inclined portion since the claims do not even define which inclined portion is closest to the *top* of the external rising wall.

Regarding claim 14, the term "gradually inclined" in claim 14 is a relative term which renders the claim indefinite. The term "gradually" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 1,2, 5-10, 12-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are:

(1) the annular groove portion and the annular bead

(2) the grove/groove surface and the annular ground portion

(3)the annular groove portion and the annular ground portion

(4) the annular groove portion, annular bead, bottom of internal rising wall

(5) bottom of the can and bottom wall

As presented in the numerous rejections made under 35 U.S.C. 112, first and second paragraphs, the amended claim language (e.g. grove/groove surface, annular groove portion, a flat internal rising wall) has introduced structural relationships that result in a non-enabling disclosure. However, to expedite prosecution, examiner is will

not be giving any weight to the annular groove or groove/grove recited structure, but will consider the amendment to claim 1 as a two part inclined portion extending from the annular ground portion, a flat internal rising section, and an aptitude for detecting internal pressure... In claim 10, similarly the amendment will be considered as a two part outer peripheral portion, a flat internal rising section, an aptitude for detecting internal pressure... , and the addition of the low pressure limitation. to be the embodiment shown in Figure 3 (E) since it is the *only* embodiment that is *closest* to the claim language (for reasons described above in the rejection of claims 1 and 10 under 35 U.S.C. 112, first paragraph).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2,5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (JP55023951) in view of Kaper et al. (US 6024996), Yamamoto et al. (JP 01252274), Lyu (US 3905507) MacPherson (US 4402419) , and Yamaguchi (US 443112).

Morita teaches a thin walled aluminum can that is resistant to deformation and is pressurized with nitrogen gas to an internal pressure of 0.3-0.7kgf/sqcm (Abstract), but is silent in teaching any particular dimension of the can or an inspection aptitude.

Kaper et al. is relied on as further evidence of a low pressure of 0.2-0.8 kgf/sqcm (i.e. from .5-5.0 bar) food items, pressurized with nitrogen, in a "standard aluminum can" (See Example 1, Column 1, line 15 to column 2, line 25).

Yamamoto et al. are relied on as further evidence of the conventionality of an aluminum can that is pressurized with gas, comprising an internal pressure of 0.6-1.8 kgf/sqcm, and is resistant to deformation (Abstract).

Lyu is relied on as evidence of a conventional aluminum can resistant to deformation that is pressurized with gas. Lyu teaches an inspection aptitude since Lyu teaches a flat bottom can that is designed to maintain a desired rigidity (i.e. remain in flat position) at a particular pressure. Lyu teaches the general dimension selected such as an annular ground portion diameter, the height of a flat bottom, the height of an inwardly directed annular bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans. The bottom of the cans comprise an annular ground portion that is 85-95% of the outer diameter of the can. Since Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of an annular bead is 15-25 times the thickness of the material used , Lyu teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used. Lyu teaches that outside the annular ground portion the can follows multiple slopes starting from a more horizontal and becoming more vertical (i.e. has at least a second inclined larger than the first) (See Figure 2 from item 16 to item 24). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the

bottom wall. (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Figures 1 and 2).

MacPherson is only relied on as evidence of the conventional thickness of aluminum used for pressurized cans: 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

Yamaguchi is relied on as further evidence of the conventionality of a pressurized can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples). Yamaguchi is also relied on as evidence of these types of aluminum cans also featuring a flat-cross section internal rising wall (See Figures 9 and 14).

Therefore, it would have been obvious to select an aluminum can having a annular ground portion from 70-85% the diameter of the outer diameter, a height of the bottom 2 mm-3.75 mm and a bead height from the bottom 0-3.5 mm, having inclined portions outside the annular ground portion that follow multiple (i.e. a second inclined portion is larger than a first), and a inclining rising wall with a flat cross section, since one would have been substituting one standard aluminum can for resisting deformation under pressure for another. To further include a annular ground portion from 70-85% the diameter of the outer diameter, a bottom height of 0.5-2 or 3.75-6mm, or annular bead height from 3.5-4.0 mm would have been an obvious result effective variables of the desired rigidity/ pressure resistance of the can since Lyu teaches these variables, in combination, affect the overall pressure resistance of the can.

2-3.75 0.2 1.5 3.75-6.25

Regarding claim 2, Morita is silent in teaching the internal pressure is maintained with an accuracy of +/-0.2 kgf/sqcm. However, Yamaguchi, who teaches conventionality of a pressurized aluminum can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples), also teaches these types of cans are given a safety range of 0.2-0.5 kgf/sqcm (Example 5). Therefore, it would have been obvious to maintain an accuracy of +/- 0.2kgf/sqcm, since this is the conventional safety range for aluminum cans with the recited bottom structure.

Regarding claim 5, Morita teaches retorting sterilization after filling and sealing fruit drink and sake (Abstract), but is silent in teaching a low acid drink per se. Yamamoto is relied on as evidence of the conventionality of using similar pressurized cans that undergo retorting after filling and sealing for low acid drinks. Therefore, it would have been obvious to include low acid drinks in the can of Morita since one would have been substituting one conventional drink for another in similar cans.

Regarding claim 6, Morita teaches a gas exchange method, or pressurizing with nitrogen gas (Abstract).

Regarding claims 7-9, Morita teaches the pressurized can resists deformation, but, as discussed above in the rejection of claim 1, is silent in teaching the particular inspection aptitude. However, Lyu teaches the deformation resistant aluminum cans have bottoms that are designed to remain flat and rigid under a particular pressure range and would change position for a change in pressure outside that range (Column 3, line 10-Column 4, line 20). Thus, Lyu teaches an internal pressure inspection

aptitude. Therefore, it would have been obvious that any inspection aptitude which evaluates the movement of a flat surface such as measurements using a tap test as recited in claim 7, displacement of the amount of an outer peripheral portion of the can as recited in claim 8, or the reaction of the outer peripheral portion of the can with respect to a change in pressure as recited in claim 9 could be used.

Claims 10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyu (US 3905507) in view of MacPherson (US 4402419), Yamaguchi (US 443112), Kaper et al. (US 6024996), Yamamoto et al. (JP 01252274).

Regarding claim 10, Lyu teaches a seamless pressurized can (i.e. a side wall and integral bottom) for carbonated beverages provides a method form determining the dimensions for such cans, preferably from thin material. Lyu teaches an inspection aptitude since Lyu teaches a flat bottom can that is designed to maintain a desired rigidity (i.e. remain in flat position) at a particular pressure. Lyu teaches the general dimension selected such as an annular ground portion diameter, the height of a flat bottom, the height of an inwardly directed annular bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans. The bottom of the cans comprise an annular ground portion that is 85-95% of the outer diameter of the can. Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of an annular bead is 15-25 times the thickness of the material used ,. Lyu teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used. Lyu teaches that outside the annular ground portion the can follows

multiple slopes starting from a more horizontal and becoming more vertical (i.e. has at least a second inclined larger than the first) (See Figure 2 from item 16 to item 24). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the bottom wall. (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Figures 1 and 2). Although Lyu teaches the can design allows for manufactures to reduce the thickness of material used, Lyu is silent in teaching the particular thickness of material, the height of the bottom and the height of the annular bead relative to the bottom, a flat internal rising wall, and the container holding a product at a pressure of 0.2-0.8 kgf/sqcm.

MacPherson is only relied on as evidence of the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

Yamaguchi is relied on as further evidence of the conventionality of a pressurized can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples). Yamaguchi is also relied on as evidence of these types of aluminum cans also featuring a flat-cross section internal rising wall (See Figures 9 and 14)

Kaper et al. are relied on as evidence of the conventionality of including low pressure of 0.2-0.8 kgf/sqcm (i.e. from .5-5.0 bar) food items in a "standard aluminum can" (See Example 1, Column 1, line 15 to column 2, line 25).

Yamamoto et al. are relied on as further evidence of the conventionality of an aluminum can that is pressurized with gas, comprising an internal pressure of 0.6-1.8 kgf/sqcm, and is resistant to deformation (Abstract).

Therefore, it would have been obvious to form the height of the bottom 1.2 mm-5.25 mm and the bead height from the bottom 0-3.5 mm, since one would have been substituting on conventional thickness of material for another for the same purpose. To further include a annular ground portion from 70-85% the diameter of the outer diameter, a bottom height of 0.5-1.2 or 5.25-6mm, or annular bead height from 3.5-4.0 mm would have been obvious result effective variables of the desired rigidity/ pressure resistance of the can since Lyu teaches these variables, in combination, affect the overall pressure resistance of the can. Additionally, it would have been obvious to modify the curved internal-rising wall and make a flat-cross section since one would have been substituting one type of internal rising wall for another for the same purpose. It would have been further obvious to include a low-pressure food at 0.2-0.8 kgf/sqcm since it was well known in the art to package such low-pressure items in conventional aluminum cans.

Regarding claim 12, as discussed above in the rejection of claim 10, Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter, the inwardly directed annular bead diameter is 75% to 95% of the annular ground portion diameter, and the flat bottom diameter is 65% to 85% of the annular bead diameter. These relationships are important to prevent deformation of the bottom of the container (Column 4, lines 21-55). Thus Lyu teaches the flat bottom diameter is 60-81% of the

ground portion diameter. To further adjust the flat bottom diameter to 82-90% of the ground portion diameter would have been an obvious result effective variable of the desired rigidity/ pressure resistance of the container since Lyu teaches the relationship of these diameters affect the pressure resistance of the can.

Regarding claim 13, Lyu teaches the angle of inclination of the internal wall connecting the annular portion to the annular bead is initially 75-90° then 55-70°, since Lyu defines this angle relative to the vertical axis as 0-15° and 20-35°. Lyu teaches this angle affects the rigidity of the bottom wall and is especially important for thinner materials (Column 4, lines 14-20). Therefore, to select any angle from 90° to 110° would have been an obvious result effective variable of the particular thickness of material used and the required bottom wall rigidity.

Regarding claim 14, Lyu teaches the annular bead has a gradually inclined portion continuous to the bottom wall from the top of the bottom wall (Figures 1 & 2).

Regarding claim 15, as discussed above in the rejection of claim 10, MacPherson teaches the conventional thickness of steel and aluminum materials used for pressurized cans is 0.15-0.22 mm and 0.25-0.35mm, respectively. Therefore, it would have been obvious to select these particular materials at these particular thickness values since one would have been substituting one known material for another for pressurized can.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. However, applicant is remind that while

the references cited in the previous office action (e.g. Lyu, MacPherson, and Yamaguchi) do not teach " employment of vibration frequency of a bottom wall generated by hitting a central portion of the bottom wall is measured to thereby detect internal pressure", a recitation of the *intended* use of the claimed invention must result in a *structural* difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 7:00AM-3:30PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
July 27, 2002

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